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# Results of a Postgraduate Survey of Physiotherapists who Participated in an Undergraduate International Exchange Program

Kazumasa Nakagawa<sup>1</sup>, Yuko Takahashi<sup>2</sup>

<sup>1,2</sup>Department of Physiotherapy, Faculty of Health Care, Takasaki University of Health and Welfare, Takasaki, Gunma, Japan

Correspondence: Kazumasa Nakagawa, Department of Physiotherapy, Takasaki University of Health and Welfare, 501 Nakaoruicho, Takasaki City, Gunma Prefecture, 370-0033, JAPAN, Tel: +81-27-352-1291, Fax: +81-27-352-1985, Email: nakagawa-ka@takasaki-u.ac.jp

## Abstract

[Introduction] Our university and Fresenius University have been conducting short-term international exchange programs involving physiotherapy students since 2012. This study aimed to assess our international exchange program's impact on students in Japan who have worked as physiotherapists after graduation. [Methods] The subjects were 95 people (40 males and 55 females) who participated in this program when they were students. A questionnaire was administered to the subjects. The questionnaire consisted of 13 items that focused on the following three topics: (A) feedback about this project (three questions); (B) subjects' present circumstances (nine questions); and (C) interest in studying or working abroad (one key question). All items were answered on an 11-point numerical rating scale (0 [totally disagree] to 10 [totally agree]). "Interest" was the dependent variable, and the other items were explanatory variables. [Results] The exchange relationship nurtured through this program continued even after graduation. However, the graduates were not active in learning about international journals and other information related to physiotherapy. The items that were significantly related to the key question were the language aspect and the continuation of exchange. [Conclusion] Physiotherapists in Japan need to develop an international perspective; thus, it is meaningful for them to gain international experience during their undergraduate years. However, the country is still not oriented toward gaining international perspectives and experiences. Hence, education of international standards and education for improving communication skills are necessary for postgraduate students.

**Keywords:** Globalization, Germany, Short-Term Study Abroad, Questionnaire, Before the COVID-19 Pandemic

## 1. Introduction

In this era of globalization, education that can help people respond to diverse situations is required. Boguslavskii et al. (Boguslavskii & Neborskii, 2016) made the following comment: "The modern concept of the University has changed considerably. Education is becoming increasingly international with constantly growing numbers of foreign students." In the same way, in Japan, universities will have to establish a new and globalized education

system in order to survive in the face of the challenge of fostering global human resources. The Ministry of Education, Culture, Sports, Science and Technology (MEXT) is strongly promoting the use of international perspectives in higher education at universities (The Japanese Ministry of Education, Culture, Sports, Science and Technology, 2023). For medical and allied health professions, education at universities is becoming more common, requiring not only the acquisition of specialized knowledge and skills, but also education tailored to diverse world situations.

The same applies to the field of physiotherapy, and it is also very important to expand the possibilities of broadening one's horizons as a physiotherapist from the age of a student. Although it is easy to acquire knowledge on the internet, etc., there is a common understanding that it is meaningful to actually experience and feel the differences in international education, and acquires a sense of it. In Japan, it is difficult to build a curriculum, such as that for practical training in other countries across national borders, like in European countries. However, even under these circumstances, some Japanese physiotherapy universities are making use of their respective characteristics to conduct various international exchange programs with foreign countries (Sato et al., 2019, Nakazawa et al., 2012). Takasaki University of Health and Welfare has a memorandum of understanding (MOU) with several universities and facilities (Takasaki University of Health and Welfare, 2023). One of these universities is Fresenius University, and this university and our university have been conducting short-term international exchange programs involving physiotherapy students since 2012 (Nakagawa, 2015).

Fresenius University has campuses in eight cities in Germany (a total of nine campuses including virtual campuses, as of August 2023), and it has many faculties, such as the Faculty of Media, Faculty of Business, and Faculty of Pharmacy (Fresenius University, 2023). The Department of Physiotherapy is included in the Faculty of Health Sciences, which also includes the Department of Occupational Therapy, Department of Speech Therapy, Department of Osteopathy, Department of Ergotherapy, Department of Physician Assistant, and other departments (Fresenius University, 2023). Fresenius University has been expanding its international exchange with our university. It established an academic MOU with our university in May 2012. Our students visited Germany in September 2012–2019, and Fresenius University students came to Japan in February 2013–2019. The program was expected to develop further with plans for joint research and faculty exchanges among both universities; however, owing to the impact of the COVID-19 pandemic, the program was suspended in 2020. In 2022, online exchange resumed, and in February 2023, exchanges through actual visits resumed, with further development expected in the future.

The value of short-term international exchange programs, such as this one, is not debatable, and it is desirable that the students who have experienced this program are working with an international perspective, which means that this program has developed internationalization. Moreover, it would be meaningful to look back on past projects and reexamine what impact this program has had on the internationalization of physiotherapy students and the possible future issues for this purpose.

Thus, this study aimed to assess our international exchange program over 7 years before the COVID-19 pandemic and evaluate its impact on students in Japan who have worked as physiotherapists after graduation. We examined whether our project is contributing to the international orientation of postgraduates.

## **2. Method**

### *2.1 Outline of Our International Exchange Program*

The student exchange program is divided into the following two parts: a study visit to Germany in September and a visit to Japan in February.

Our students visited Fresenius University for about 10 days from mid-September to late September in 2012–2019. The sites were mainly in the towns where the university campuses of the Department of Physiotherapy were located, including Idstein, Frankfurt, Cologne, and Munich. The students who participated in the program were third-year students of the Department of Physiotherapy, Faculty of Health Care, and there were about 15 students

each year, although the number varied from year to year. Two or three faculty members from the Department of Physiotherapy or the International Exchange Affairs accompanied the students as teachers, serving as interpreters and coordinators, and they helped in exchanges and meetings with faculty members from Fresenius University. The students had already completed their basic physiotherapy education and could take more specialized courses, undertake graduation research, or start clinical practice. We conducted sufficient training sessions before and after the visit so that the students could share their knowledge and reconfirm their learnings.

Alternatively, Fresenius University students visited our university for about 10 days from mid-February to late February in 2013–2019. The site was Takasaki city, where the university is located, and tours of facilities in Tokyo were also conducted if the schedule allowed. Although the semester of enrollment of the visiting students varied from year to year, each year, about 15 students visited our university with one or two faculty members from the Department of Physiotherapy.

Although the content of the program varied from year to year, it mainly consisted of lectures, practical experience, group work, facility tours, etc. The program also included campus tours, cultural experiences, and student-to-student exchanges. In addition, students stayed at each other's homes or apartments, which deepened their friendship. The program was developed in such a way as to incorporate group work, presentations, lectures, and practical skill experiences among the students of both countries, with a specific theme chosen each year. Moreover, the program was developed in such a way that the visit of Japanese students in September and the visit of German students in February were connected, deepening their learnings.

## 2.2 Participant (Subject) Characteristics

The subjects of this study were 95 people (40 males and 55 females) who participated in this program when they were students. Participants from the year in which some parts of the program were canceled owing to COVID-19 were excluded from this study.

## 2.3 Questionnaire Methods

A questionnaire was administered to the subjects. The questionnaire (Table 1) was followed by the contents of the Japan Student Services Organization (JASSO), and it consisted of 13 items that focused on the following three topics: (A) feedback about this project (three questions; one was about total impression and two were about acquired skills); (B) subjects' present circumstances (nine questions; three were about academic issues, three were about language issues, and three were about international exchanges); and (C) interest in studying or working abroad (henceforth referred to as "interest"; one key question). All items were answered on an 11-point numerical rating scale (0 [totally disagree] to 10 [totally agree]). "Interest" was the dependent variable, and the other items were explanatory variables.

Table 1: Contents of the questionnaire

A: Feedback about the project	
A-1 Total impression	"Overall, are you satisfied with your participation in this international program?"
A-2 Competency 1 that participants believe they have learned	"Do you think this training has improved your ability to overcome difficulties on your own?"
A-3 Competency 2 that participants believe they have learned	"Did you deepen your understanding of Japanese culture and the current state of physiotherapy in Japan?"
B: Subject's present circumstances	
B-1 Academic	
B-1-1	"Are you actively studying knowledge and data in your specialized field?"
B-1-2	"Are you actively collecting foreign articles to understand the international academic level or standard?"
B-1-3	"Are you voluntarily participating in workshops or study meetings and trying to develop yourself?"
B-2 Language	
B-2-1	"Are you trying to improve your language skills?"
B-2-2	"Do you feel resistant to the conversation and communication when being spoken to by a foreigner?"
B-2-3	"Do you actively speak a foreign language or communicate with a foreigner?"

## B-3 International exchanges

B-3-1 "Are you still keeping contact with German friends?"

B-3-2 "Would you like to work on something in cooperation with your German friends in the future?"

B-3-3 "Do you think that friendship and network with foreign people are very good things?"

## C: &lt;KEY QUESTION&gt;

"Are you looking overseas for careers and employment?"

## 2.4 Analysis Methods

Statistical analysis involved multiple regression analysis. All analyses were performed using IBM SPSS version 29 (IBM Corp., Armonk, NY), and the significance level was set at 5%.

## 3. Results

## 3.1 Characteristics of the Respondents

The final analysis included 91 respondents (38 males and 53 females; 95.8% response rate). The survey period was from June to August 2021, and the subjects had between 1 and 7 years of postgraduation experience as physical therapists, with an average of 4.14 years of experience.

## 3.2 Questionnaire Results

The results of each question are shown in Table 2. Topic B-3 ("International exchanges") showed generally good results, especially question B-3-3 ("Do you think that friendship and networking with foreign people are very good things?"), which had a very high score ( $9.26 \pm 1.44$ ). Conversely, question B-1-2 ("Are you actively collecting foreign articles to understand the international academic level or standard?"), question B-2-1 ("Are you trying to improve your language skills?"), and question B-2-3 ("Do you actively speak a foreign language or communicate with a foreigner?") had low scores ( $4.63 \pm 2.83$ ,  $3.64 \pm 2.63$ , and  $5.22 \pm 2.53$ , respectively). The key question of Topic C ("Are you looking overseas for careers and employment?") had a very low score ( $3.38 \pm 2.94$ ), but there were ten respondents who provided a score between 8 and 10.

Table 2: The results of each question

A	A-1	$9.41 \pm 1.07$	
	A-2	$6.49 \pm 2.02$	
	A-3	$8.36 \pm 1.68$	
B	B-1	B-1-1	$6.81 \pm 2.13$
		B-1-2	$4.63 \pm 2.83$
		B-1-3	$6.46 \pm 2.76$
	B-2	B-2-1	$3.64 \pm 2.63$
		B-2-2	$6.63 \pm 1.98$
		B-2-3	$5.22 \pm 2.53$
	B-3	B-3-1	$6.58 \pm 2.96$
		B-3-2	$6.48 \pm 2.94$
		B-3-3	$9.26 \pm 1.44$
C		$3.38 \pm 2.94$	

Scored by Numerous Rating Scale  
(10=total agreed, 0=totally disagreed)

The results of multiple regression analysis are shown in Table 3. The following questions were identified as significant explanatory variables: "Do you make an effort to improve your language skills?" and "Do you still maintain the friendships you made during the project?" The items "I think it is very good to build relationships and contacts overseas" and "I think this project has broadened my perspective" had high scores but did not lead to a subsequent orientation toward working or studying overseas.

Table 3: Results of multiple regression analysis

		Valiance	p-value	95% CI	
A	[A-1]	-0.123	0.688	-0.731	to 0.485
	[A-2]	0.027	0.849	-0.258	to 0.313
	[A-3]	0.309	0.084	-0.043	to 0.661
B-1	[B-1-1]	0.293	0.078	-0.034	to 0.620
	[B-1-2]	0.054	0.597	-0.148	to 0.255
	[B-1-3]	-0.123	0.325	-0.370	to 0.124
B-2	[B-2-1]	0.304	0.023*	0.043	to 0.565
	[B-2-2]	-0.053	0.753	-0.390	to 0.283
	[B-2-3]	0.241	0.131	-0.074	to 0.555
B-3	[B-3-1]	0.282	0.013*	0.0622	to 0.501
	[B-3-2]	0.012	0.919	-0.226	to 0.250
	[B-3-3]	-0.140	0.557	-0.610	to 0.331

\* =  $p < 0.05$ 

## 4. Discussion

### 4.1 Interpretation of Results

Feedback on the program from graduates was positive, and it appears to be effective as an opportunity for international exchange. An exchange study is an enriching and personally transformative experience, sometimes with life-altering impact. Hande et al. reported about an exchange program in physiotherapy between Sweden and India, and they stated that it is a good way to gain both personal and professional growth (Hande, et al., 2022). We also found similar results in a domestic report by Sato et al., who mentioned that a short-term exchange program influenced students' awareness (Sato et al., 2019), and our previous research has also reported similar results (Nakagawa, 2015). McAllister et al. stated the following: "Professionals are increasingly being required to work in diverse, multicultural environments, and skills in intercultural practice are a prerequisite for success. Ensuring that these are developed is increasingly part of the core business of universities" (McAllister, et al., 2006). We completely agree with this opinion. It is meaningful to cultivate an international perspective as early as possible in one's pregraduation years, and it is essential for universities to be prepared to provide such opportunities. Kurunsaari et al. reported that different turning points exist in the professional development process of students and that they are very meaningful (Kurunsaari, et al., 2022). It is important that a variety of opportunities and possibilities exist, and it is quite possible that international stimulation may be an ignition factor. Schoeb et al. reported that physiotherapy students with globalized experience relied on their past educational exposure to provide meaning to their future (Schoeb & Chong, 2019). Therefore, it can be expected that these experiences will have an impact on subsequent activities as a physiotherapist.

It was gratifying to see that the exchange relationship nurtured through this program continued even after graduation. The subjects were very receptive to questions about what they would like to do together after graduation, and they actually held a postgraduation exchange event (Takasaki University of Health and Welfare, 2023). These connections are very valuable, and we have high expectations for their future development.

However, as professionals, the graduates were not active in learning about international journals and other information related to physiotherapy. While this is unavoidable in Japan, where there are few opportunities to encounter English in daily life, it is important in this era of globalization to keep one's eyes and ears open for international information, and this is an unfortunate situation for the physiotherapists who have graduated from our university. The key question of whether they are considering long term study or work abroad in the future had a low response. It may be a matter of debate as to whether this is a natural result, a poor result for those who studied abroad for a short period of time, or a positive result for those who expressed an interest. We could not ascertain the actual number of physiotherapists working as therapists, but according to available data, the number of physiotherapists staying and working long term has been reported to be 10,000 to 15,000 (The Japanese Ministry

of Education, Culture, Sports, Science and Technology, 2023), which is probably a very small proportion, considering the number of graduates from all universities. In such a situation, the finding that ten out of the 91 respondents were interested in going abroad seems to be a favorable result. We value their opinions and would like to continue to follow-up with students and graduates who are interested in such international activities.

The items that were significantly related to the key question were the language aspect and the continuation of exchange. De Brito et al. reported about a project in Denmark to actively incorporate international exchange, and mentioned that the project was associated with internationalization that led to physiotherapy students' professional development (de Brito Silva, et al., 2020). While the effectiveness of the program as a stimulant for pregraduates is as mentioned above, it is expected that such exchanges after graduation will lead to the expansion of international perspectives and the development of expertise as a physiotherapist. The university provides opportunities for postgraduate exchange, and this study highlights the importance of such opportunities. In addition, Broberg et al. reported the development of a conceptual framework for physiotherapy curriculum design under international collaboration and mentioned that this would stimulate an international discussion on physiotherapy education (Broberg C, et al., 2003). While an international curriculum is too large a topic compared with the topic of this study, it is hoped that the participation of both graduates and their professors in the exchange programs will lead to meaningful discussions that will be beneficial to the development of both universities.

Regarding the language aspect, there appears to be a need for continuous language training and stimulation via ongoing exchange. Lopes et al. reported that international exchange programs among higher education institutions and research centers in Portuguese-speaking countries have the potential to promote early exposure to international contexts and the development of skills for a more active and global professional role (Lopes AA, et al., 2023). The opportunity to interact in the same language, albeit from a different country and culture, seems to be very advantageous in terms of deployment. For Japanese people, language is one of the biggest barriers, and communication in English is essential for promoting international exchange. Smith et al. reported that "proficiency in English emerges as a dominant linguistic and epistemic model, increasingly viewed as a prerequisite to high-level employment" (Smith & Samuell, 2022). In the context of long-term studies and employment, improvement of English communication skills will continue to be an important perspective. The development of online communication has opened up a variety of possibilities to interact with each other in various ways, and it might be beneficial for universities to consider providing postgraduate exchange opportunities, as mentioned above, as communication opportunities.

#### *4.2 Conclusion*

Physiotherapists in Japan need to develop an international perspective; thus, it is meaningful for them to gain international experience during their undergraduate years. However, the country is still not oriented toward gaining international perspectives and experiences. Hence, education of international standards and education for improving communication skills are necessary for postgraduate students.

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**Conflicts of Interest:** The authors declare no conflict of interest.

**Informed Consent Statement/Ethics approval:** As an ethical consideration, eligible subjects from the alumni association's contact list were contacted simultaneously by e-mail and asked to respond after explaining the purpose of this study. The responses were made without a name on the form, and consent was obtained. The details of the research were published on the university's website, and the research adopted an opt-out approach. Approval was obtained from the Ethics Committee of our university (Takasaki University of Health and Welfare Ethics No. 2122).

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